

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference FA06-449PCT	<b>FOR FURTHER ACTION</b>	
	See item 4 below	
International application No. PCT/JP2006/301293	International filing date ( <i>day/month/year</i> ) 27 January 2006 (27.01.2006)	Priority date ( <i>day/month/year</i> ) 31 January 2005 (31.01.2005)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant JAPAN SCIENCE AND TECHNOLOGY AGENCY		

<p>1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).</p> <p>2. This REPORT consists of a total of 4 sheets, including this cover sheet.</p> <p>In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.</p>																								
<p>3. This report contains indications relating to the following items:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;"><input checked="" type="checkbox"/></td> <td style="width: 15%; text-align: left;">Box No. I</td> <td style="width: 70%;">Basis of the report</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table> <p>4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).</p>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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	Date of issuance of this report 31 July 2007 (31.07.2007)
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland  Facsimile No. +41 22 338 82 70	Authorized officer  <b>Masashi Honda</b> e-mail: pt08.pct@wipo.int

**PATENT COOPERATION TREATY**

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

**PCT**  
*TRANSLATION*

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

		Date of mailing (day/month/year)
Applicant's or agent's file reference <b>FA06-449PCT</b>		<b>FOR FURTHER ACTION</b> See paragraph 2 below
International application No. <b>PCT/JP2006/301293</b>	International filing date (day/month/year) <b>27.01.2006</b>	Priority date (day/month/year) <b>31.01.2005</b>
International Patent Classification (IPC) or both national classification and IPC		
Applicant <b>JAPAN SCIENCE AND TECHNOLOGY AGENCY</b>		

1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP	Date of completion of this opinion	Authorized officer
Facsimile No.		Telephone No.

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No. <b>PCT/JP2006/301293</b>
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**Box No. I Basis of this opinion**

1. With regard to the language, this opinion has been established on the basis of:  
 the international application in the language in which it was filed  
 the translation of the international application into \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (Rule 12.3(a) and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material  
 a sequence listing  
 table(s) related to the sequence listing
  - b. format of material  
 on paper  
 in electronic form
  - c. time of filing/furnishing  
 contained in the international application as filed  
 filed together with the international application in electronic form  
 furnished subsequently to this Authority for the purposes of search
3.  In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/JP2006/301293

Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement																			
<p>1. Statement</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%; padding-bottom: 5px;">Novelty (N)</td> <td style="width: 60%; padding-bottom: 5px;">Claims</td> <td style="width: 20%; text-align: right; padding-bottom: 5px;">YES</td> </tr> <tr> <td></td> <td style="padding-bottom: 5px;">Claims</td> <td style="text-align: right; padding-bottom: 5px;">NO</td> </tr> <tr> <td style="padding-bottom: 5px;">Inventive step (IS)</td> <td style="padding-bottom: 5px;">Claims</td> <td style="text-align: right; padding-bottom: 5px;">YES</td> </tr> <tr> <td></td> <td style="padding-bottom: 5px;">Claims</td> <td style="text-align: right; padding-bottom: 5px;">NO</td> </tr> <tr> <td style="padding-bottom: 5px;">Industrial applicability (IA)</td> <td style="padding-bottom: 5px;">Claims</td> <td style="text-align: right; padding-bottom: 5px;">YES</td> </tr> <tr> <td></td> <td style="padding-bottom: 5px;">Claims</td> <td style="text-align: right; padding-bottom: 5px;">NO</td> </tr> </table> <p>2. Citations and explanations:</p> <p>Document 1: S. ISHIKAWA et al., J. Am. Chem. Soc., 2004, Vol. 126, No. 39, pages 12236 and 12237</p> <p>Document 2: K. MANABE et al., Tetrahedron, 2003, Vol. 59, pages 10439-10444</p> <p>Document 3: JP, 2001-252570, A (Japan Science and Technology Corp.), 18 September, 2001 (18.09.01)</p> <p>The documents shown above were cited in the ISR.</p> <p>The subject matters of claims 1-5 appear to be novel and to involve an inventive step in view of documents 1-3.</p> <p>Documents 1-3 describe neither the manufacturing method of optically-active hydroxymethylated compounds, wherein a silicon enolate is reacted with formaldehyde in either an aqueous solution or a mixed solvent of water and an organic solvent in the presence of a catalyst obtained by mixing a ligand consisting of a chiral bipyridine or an antipode thereof with a Lewis acid represented as <math>\text{BiY}_3</math> (where, Y is a halogen atom, OAc, OCOCF<sub>3</sub>, ClO<sub>4</sub>, SbF<sub>6</sub>, PF<sub>6</sub> or OSO<sub>2</sub>CF<sub>3</sub>), nor the above-mentioned catalyst itself.</p>			Novelty (N)	Claims	YES		Claims	NO	Inventive step (IS)	Claims	YES		Claims	NO	Industrial applicability (IA)	Claims	YES		Claims	NO
Novelty (N)	Claims	YES																		
	Claims	NO																		
Inventive step (IS)	Claims	YES																		
	Claims	NO																		
Industrial applicability (IA)	Claims	YES																		
	Claims	NO																		